GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA

UNSTARRED QUESTION NO:1657
ANSWERED ON:09.12.2015
Coastal Protection
Chandrakasi Shri M.

Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether the Government completed its shoreline mapping programme for the coastal region of the country and if so, the details thereof with particular reference to Tamil Nadu coast;

(b) the details regarding vulnerable regions in the Tamil Nadu coast for sea erosion during high tide period;

(c) whether any research activity has been undertaken by the Ministry to find out and develop effective means to check sea erosion and if so, the details thereof; and;

(d) the manner in which the Government furnishes and shares information and data regarding shoreline and seabed with the concerned State / District authorities for better coordination and common benefit?

Answer

The MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(SHRI Y. S. CHOWDARY)

(a & b) Yes. Madam. As a part of shoreline mapping program, the shoreline changes of the entire east coast of India covering a distance of 2961 km starting from Kanyakumari to Sundarbans delta has been analyzed to study the long term and inter annual shoreline change rate. A total of 244 shoreline change maps of the entire east coast of India have been prepared on 1:25,000 scale. Overall shoreline change statistics of east coast reveals that 39% of coastline falls under erosion category, 20% in stable condition and 41% shows accretion pattern. As far as the state wise statistics are concerned, the maximum percentage of erosion is occurred in West Bengal (66%) followed by Tamil Nadu (43%) whereas; maximum percentage of accretion is found in Odisha coast (60%). In each state, the key erosion spots have been identified and currently studying causes of erosion particularly in such areas. Besides, a wide range of coastal vulnerability maps on different spatial scales are being generated for the entire coast of India by various agencies primarily for use in the forewarning of various ocean hazards viz., Tsunami, Cyclones and Storm Surges. An atlas on Coastal Vulnerability Index (CVI) on 1:1,00,000 scale has been prepared for the entire Indian coast. On a pilot scale, 3-Dimensional Geographical Information System (3D GIS) maps for the coastal stretch between Cuddalore and Nagapattinum have been completed in association with Industry Partners.

(c) Yes, Madam. These studies have been carried out using geospatial techniques along with ground truth survey all along the east coast of India. The Multi-resolution remote sensing satellite data of different dates were used for shoreline change rate. In most cases, the erosion is mainly due to anthropogenic activities such as construction of ports, breakwaters, groins etc. In some cases extreme events like cyclones, storm surges, river sediment/water discharge etc. cause shoreline erosion. The CVI has been generated using basic information on seven risk variables, viz. shoreline change rate, sea-level change rate, coastal slope, mean significant wave height, mean tidal range, coastal regional elevation and coastal geomorphology. Most of the above parameters are dynamic in nature and require a large amount of data from different sources to be acquired, analyzed and processed, with an inbuilt updating mechanism.

(d) The shoreline maps are provided by MoES to the coastal state governments / coastal administrators for utilisation towards saving lives and property during disasters including conducting periodical training programs to coastal administrators. The Ministry of Environment and Forest (MoEF) is using these maps for integrated coastal zone management activities. A National Centre for Sustainable Coastal Management (NCSCM) has been established by MoEF in Chennai to regional centres in each of the coastal States/Union territories to promote research and development in the area of coastal management including demarcation of hazard line for mapping the entire coastline of mainland India.